

--7. (amended) Process according to claim 1, characterized in that the ratio ( $I_{rms}/I_{mean}$ ) of the rms current ( $I_{rms}$ ) value to the mean current ( $I_{mean}$ ) value is between 1.05 and 2, preferably between 1.1 and 1.8.--

--8. (amended) Process according to claim 1, characterized in that the workpiece or workpieces to be welded are made of carbon steel and in that the ratio ( $I_{rms}/I_{mean}$ ) of the rms current ( $I_{rms}$ ) value to the mean current ( $I_{mean}$ ) value is between 1.05 and 2, preferably between 1.05 and 1.6.--

--9. (amended) Process according to claim 1, characterized in that the workpiece or workpieces to be welded are made of stainless steel and in that the ratio ( $I_{rms}/I_{mean}$ ) of the rms current ( $I_{rms}$ ) value to the mean current ( $I_{mean}$ ) value is between 1.05 and 2, preferably between 1.1 and 1.8.--

--10. (amended) Process according to claim 1, characterized in that the workpiece or workpieces to be welded are made of aluminium or aluminium alloy and in that the ratio ( $I_{rms}/I_{mean}$ ) of the rms current ( $I_{rms}$ ) value to the mean current ( $I_{mean}$ ) value is between 1.05 and 2, preferably between 1.05 and 1.5.--

--11. (amended) Process according to claim 1, characterized in that the gas shield consists of a gas or

at  
Cont'd

10023870-122101

gas mixture chosen from helium, argon, carbon dioxide, oxygen, nitrogen and hydrogen and/or in that the consumable wire has a diameter of between 0.6 mm and 2.2 mm, preferably between 0.8 mm and 1.6 mm.--

at  
confid

--12. (amended) Process according to claim 1, characterized in that the welding is of the pulsed MIG or pulsed MAG type and in that the wire is a solid wire or a flux-cored wire.--

10023870-122101

--13. (amended) Pulsed arc welding device, capable of implementing a process according to claim 1, comprising:

- frequency selection means for setting, adjusting or selecting a pulse frequency;
- wire speed selection means for setting, adjusting or selecting a wire feed speed ( $V_{wire}$ );
- means for determining the mean current ( $I_{mean}$ ) and rms current ( $I_{rms}$ ) values making it possible to determine or calculate at least one mean current ( $I_{mean}$ ) value and at least one rms current ( $I_{rms}$ ) value such that:

$$I_{mean} = A_1 V_{wire} + B_1, \text{ where } 5 < A_1 < 45 \text{ and } 5 < B_1 < 50 \text{ and}$$

$$I_{rms} = A_2 V_{wire} + B_2, \text{ where } 5 < A_2 < 45 \text{ and } 45 < B_2 < 110,$$

where  $I_{mean}$  and  $I_{rms}$  are expressed in amps and  $V_{wire}$  is expressed in m/min; and

- current adjustment means for adjusting the welding current in response to the determination or calculation of the mean current ( $I_{mean}$ ) and rms

01  
entel

current ( $I_{rms}$ ) values by the said means for determining the mean current ( $I_{mean}$ ) and rms current ( $I_{rms}$ ) values;

- preferably it includes or consists of at least one welding current generator.--

R E M A R K S

10023870-122101

The above changes in the specification and claims merely place this national phase application in the same condition as it was during Chapter II of the international phase, with the multiple dependencies being removed. Following entry of this amendment by substitution of the pages, only claims remain pending in this application.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

YOUNG & THOMPSON

By

Benoît Castel

Benoît Castel  
Attorney for ApplicantS  
Registration No. 35,041  
Customer No. 00466  
745 South 23rd Street  
Arlington, VA 22202  
Telephone: 703/521-2297

December 21, 2001